Section 4

- Healthcare Planning -

Rationale

An influenza pandemic will place a huge burden on the Massachusetts healthcare system. Our planning assumptions (30% attack rate, 4% hospitalization rate, 1% death rate) project 2 million cases of influenza in Massachusetts resulting in 80,000 hospitalizations, 20,000 deaths, and over one million outpatient visits over the course of the first wave. Estimates based on extrapolation from the more severe 1918 pandemic suggest that substantially more cases, hospitalizations and deaths could occur. The demand for inpatient and intensive-care unit (ICU) beds is expected to be overwhelmed early in the pandemic, and mechanical ventilators will be in extremely short supply. Pre-pandemic planning by healthcare facilities is therefore essential to provide quality, uninterrupted care to ill persons and to prevent further spread of infection. Effective planning and implementation will depend on close collaboration among state and local health departments, community partners, and neighboring and regional healthcare facilities. Despite planning and preparedness, however, in a severe pandemic it is possible that severe shortages, of mechanical ventilators for example, will occur, and medical care standards may need to be adjusted to most effectively provide care and save as many lives as possible.

Assumptions

- High attack rates will place overwhelming demands on the health care system.
- Health care providers and emergency response and public safety personnel will be equally or more likely to become infected than the general public.
- Certain high-risk groups will be less likely to have access to information and services (e.g., people who are homeless, homebound, poor, hearing or visually impaired, undocumented or who do not speak English).
- Because the pandemic will be widespread, it is unlikely that resources could be diverted from other areas. Every community will have to be prepared to be self-sufficient, while at the same time sharing resources such as hospitals, mortuary services, etc.
- During epidemic peaks, it is likely that all hospitals will largely function as tertiary care centers, secondary care facilities (rehab centers, nursing homes, community health centers) would serve as "surge" hospitals to accommodate non-flu patients, and large numbers of patients would be cared for within their own homes by family members and any available visiting nurses, home health care, or other care providers. Flu patients requiring hospitalization will be admitted to ISCUs except for patients needing mechanical ventilation or complex medical management needs who will be admitted to acute care hospitals, subject to bed availability.

Projections:

Population	6.4 Million	Cumulative
Total Ill Based on 30% AR	2,000,000	Cumulative
Total Requiring Care	1,000,000	Cumulative
Hospital Level Care Needed	80,000 11,569	Cumulative Peak Week
Weekly Hospital Admissions (Daily)	15,200 (2,369)	Peak Week (Peak Daily)
Outpatient Care Only	920,000	Cumulative
Total Deaths (Deaths occurring in hospitals)	20,000 3,800 (2,660)	Cumulative Peak Week

Overview

This section provides healthcare partners with recommendations for developing plans to respond to an influenza pandemic. The focus is on planning during the Interpandemic Period for: pandemic influenza surveillance, decision-making structures for responding to a pandemic, hospital communications,

education and training, patient triage, clinical evaluation and admission, facility access, occupational health, distribution of vaccines and antiviral drugs, surge capacity, and mortuary issues. Planning for the provision of care in non-hospital settings—including residential care facilities, physicians' offices, private home healthcare services, emergency medical services, federally qualified health centers (FQHCs), rural health clinics, and alternative care sites (ISCUs)—is also under development and will be included in future revisions.

The recommendations for the Pandemic Period focus on activation of institutional pandemic influenza response plans. The ability to provide detailed guidance on this aspect of the pandemic is limited because of uncertainty about how the pandemic will evolve and variation and uncertainty of local factors that will influence decisions at various stages. Links to additional resources that provide the most up-to-date guidance on particular topics are included. A checklist to help facilities assess their current level of readiness to respond locally to an influenza pandemic is provided in Appendix 3.

Recommendations for the Interpandemic and Pandemic Alert Periods

A) **Planning for provision of care in hospitals:** Massachusetts healthcare facilities must be prepared for the rapid pace and dynamic characteristics of pandemic influenza. All hospitals should be equipped and ready to care for: 1) a limited number of patients infected with a pandemic influenza virus, or other novel strains of influenza, as part of normal operations; and 2) a large number of patients in the event of escalating transmission of pandemic influenza. Hospital response plans for pandemic influenza should:

- Outline administrative measures for detecting the introduction of pandemic influenza, preventing its spread, and managing its impact on the facility and the staff.
- Build on existing preparedness and response plans for bioterrorism events, SARS, and other infectious disease emergencies.
- Incorporate planning suggestions from state and local health departments and other local and regional healthcare facilities and response partners.
- Identify criteria and methods for measuring compliance with response measures (e.g., infection control practices, case reporting, patient placement, healthcare worker illness surveillance).
- Review and update inventories of supplies that will be in high demand during an influenza pandemic.
- Review procedures for the receipt, storage, and distribution of assets received from state and federal stockpiles.
- Include mechanisms for periodic reviews and updates.
- Hospitals should use an "all-hazards" incident command structure for responding to pandemic influenza and will need to incorporate the relevant aspects of communicable disease control that are included in this supplement. Hospitals should consider using "table top" simulations or other exercises to test response capabilities.

2) **Planning process**: Groups and individuals involved in the hospital planning process should include:

- An internal, multidisciplinary planning committee with responsibility for pandemic influenza preparedness and response. The committee should include technical experts, persons with decision-making authority, and representatives from a range of response partners. A pre-existing all-hazards preparedness team (e.g., established for bioterrorism or SARS response) might assume this role.
- A response coordinator/incident commander to direct the facility's planning and response efforts
- A core group from the multidisciplinary planning committee to work with the response coordinator and assist with decision-making during the pandemic
- The pandemic influenza response team should plan to remain active throughout the pandemic period, which could be several weeks or months.
- Hospital planning for pandemic influenza should consider concurrent public health, community, and healthcare planning efforts at the local, state, and regional levels. Some possible mechanisms for collaboration and coordination are to:

- Include the HRSA regional hospital coordinator and local health department representatives from your community clusters as members on the hospital planning committee (see Box 1).
- Obtain copies of draft pandemic influenza plans from other local or regional hospitals to use as models.
- Work with other local hospitals, community organizations (e.g., social service groups), and the state or local health department to coordinate healthcare activities in the community and define responsibilities for each entity during a pandemic.
- Collaborate with HRSA hospital preparedness programs in the state or region.
- Include a hospital representative in local or regional planning efforts.
- Include representatives from safety-net providers in the local community (e.g., FQHCs and rural health clinics).

2) **Planning elements:** The elements of a hospital influenza pandemic preparedness plan discussed below are listed in the Hospital Preparedness Checklist.

(a) Hospital surveillance

- Hospital surveillance for novel strains of influenza: During the Inter-pandemic and Pandemic Alert Periods, healthcare providers and healthcare facilities play an essential role in surveillance for suspected cases of infection with novel strains of influenza and should be on the alert for such cases. Novel strains may include avian or animal influenza strains that can infect humans (like avian influenza A [H5N1]) and new or re-emergent human viruses that cause cases or clusters of human disease.
- While point-of-care rapid testing or viral isolation are not recommended for highly suspect cases of avian influenza, during an influenza pandemic hospitals and other healthcare facilities will need to be able to perform diagnostic tests for influenza according to the recommended protocols. Procedures in place to facilitate laboratory testing on-site using proper biosafety levels and reporting of unusual influenza isolates through local and state health department channels (see Surveillance Section). If appropriate methods or biosafety levels do not exist at the hospital, specimens should be shipped to the state health department.
- Predetermine thresholds for activating influenza surveillance plans (see Table1)
- Hospital surveillance for pandemic influenza: During the Pandemic Period, healthcare providers and healthcare facilities will play an essential role in pandemic influenza surveillance (see Surveillance Section). For detection of cases during the Pandemic Period, hospitals should have:
    - Mechanisms for conducting surveillance in emergency departments to detect any increases in influenza-like illness (see box below) during the early stages of the pandemic
    - Mechanisms for monitoring employee absenteeism for increases that might indicate early cases of pandemic influenza
    - Mechanisms for tracking emergency department visits and hospital admissions and discharge of suspected or laboratory-confirmed pandemic influenza patients. This information will be needed to: 1) support local public health personnel in monitoring the progress and impact of the pandemic, 2) assess bed capacity and staffing needs, and 3) detect resurgence in pandemic influenza that might follow the first wave of cases.
    - Updated information on the types of data that should be reported to state or local health departments (e.g., admissions; discharges/deaths; patient characteristics such as age, underlying disease, and secondary complications; illnesses in healthcare personnel) and plans for how these data will be collected during a pandemic. State and local health departments will provide guidance on the scope and mechanism of reporting (see Surveillance Section).
    - Criteria for distinguishing pandemic influenza from other respiratory diseases (see Clinical Guidelines Section).

Symptoms of influenza include fever, headache, myalgia, prostration, coryza, sore throat, and cough. Nausea and vomiting are also commonly reported among children. Typical influenza (or "flu-like") symptoms, such as fever, may not always be present in elderly patients, young children, patients in long-term care facilities, or persons with underlying chronic illnesses (see also Clinical Guidelines section)

(b) **Hospital Communications**: Each hospital should work with public health officials, other government officials, neighboring healthcare facilities, the lay public, and the press to ensure rapid and ongoing information sharing during an influenza pandemic.

External communications

- Assign responsibility for external communication about pandemic influenza; identify a person responsible for updating public health reporting (e.g., infection control), a clinical spokesperson (e.g., medical director), and a media spokesperson (e.g., public information officer).
- Identify points of contact among local media (e.g., newspaper, radio, television) representatives and public officials, public safety, emergency management and community leaders.
- With guidance from state or local health departments, determine the methods, frequency, and scope of external communications.
- Determine how communications between local and regional healthcare facilities will be handled.
    - Assign responsibility within the hospital for communications with other healthcare facilities.
    - Consult with state or local health departments on plans for coordinating or facilitating communication among healthcare facilities at the Regional Medical Coordinating Center (RMCC), if available. In the absence of such a plan, consider organizing a meeting of local health facilities to determine an optimal communications strategy.
    - Identify key topics for ongoing communication (e.g., staffing needs, bed capacity, durable and consumable medical equipment and device needs, and supplies of influenza vaccine and antiviral drugs).

- Consult with local or state public health officials regarding the hospital's role in communicating with the media and the public.
    - Determine the type of hospital-specific communications (e.g., press releases, community bulletin board) that might be needed, and develop templates for these materials.
    - Consult with local or state health departments on plans for pandemic influenza hotline inquiries.
    - Determine how public inquiries will be handled (e.g., refer callers to the health department; provide technical support for handling calls).
    - Identify the types of information that will be provided by the hospital and the types of inquiries that will be referred to state or local health departments.

Internal communications

- Determine how to keep administrators, personnel (including infection control staff and intake and triage staff), patients, and visitors informed of the ongoing impact of pandemic influenza on the facility and on the community.
- Educate all clinical and non-clinical employees of need to come to work.

(c) Education and training: Each hospital should develop an education and training plan that addresses the needs of staff, patients, family members, and visitors. Hospitals should assign responsibility for coordination of the pandemic influenza education and training program and identify training materials—in different languages and at different reading

levels, as needed—from HHS agencies, state and local health departments, and professional associations.

(d) Staff Education

- Identify educational resources for clinicians, including federally sponsored teleconferences, state and local health department programs, web-based training materials, and locally prepared presentations.
- General topics for staff education should include:
  - Prevention and control of influenza
  - Implications of pandemic influenza
  - Benefits of annual influenza vaccination
  - Role of antiviral drugs in preventing disease and reducing rates of severe influenza and its complications
  - Infection control strategies for the control of influenza, including respiratory hygiene/cough etiquette, hand hygiene, standard precautions, droplet precautions, and, as appropriate, airborne precautions.
- Hospital-specific topics for staff education should include:
  - Policies and procedures for the care of pandemic influenza patients, including how and where pandemic influenza patients will be cohorted
  - Pandemic staffing contingency plans, including how the facility will deal with illness in personnel
  - Policies for restricting visitors and mechanisms for enforcing these policies
  - Reporting to the health department suspected cases of infection caused by novel influenza strains during the Interpandemic and Pandemic Alert Periods
  - Measures to protect family and other close contacts from secondary occupational exposure
- Establish a schedule for training/education of clinical staff and a mechanism for documenting participation.
- Consider using annual infection control updates/meetings, medical Grand Rounds, and other educational venues as opportunities for training on pandemic influenza. State and Regional HRSA Hospital Preparedness staff is available for presentations.
- Cross-train clinical personnel, including outpatient healthcare providers, who can provide support for essential patient-care areas (e.g., emergency department, ICU, medical units).
- Train intake and triage staff to detect patients with influenza symptoms and to implement immediate containment measures to prevent transmission (see Clinical Guidelines Section).
- Supply social workers, psychologists, psychiatrists, and nurses with guidance for providing psychological support to patients and hospital personnel during an influenza pandemic (see Psychosocial Section). (HHS agencies will identify or develop educational materials on: signs of distress, traumatic grief, stress management and effective coping building and sustaining personal resilience, and behavioral and psychological support resources.)
- If feasible, hospitals should also provide psychological-support training to appropriate individuals who are not mental health professionals (e.g., primary-care clinicians, leaders of community and faith-based organizations).
- Develop a strategy for “just-in-time” training of non-clinical staff and MSAR volunteers who might be asked to assist clinical personnel (e.g., help with triage, distribute food trays, transport patients), students, retired health professionals, and volunteers who might be asked to provide basic nursing care (e.g., bathing, monitoring of vital signs); and other potential in-hospital caregivers (e.g., family members of patients)

Education of patients, family members, and visitors: Patients and others should know what they can do to prevent disease transmission in the hospital, as well as at home and in community settings.

- Identify language-specific and reading-level appropriate materials for educating patients, family members, and hospital visitors during an influenza pandemic. If language-specific materials are not available for the population(s) being served, arrange for translations.
- Develop a plan for distributing information to all persons who enter the hospital.
- Identify staff to answer questions about procedures for preventing influenza transmission.

(e) **Triage, clinical evaluation, and admission procedures:** During the peak of a pandemic, hospital emergency departments and outpatient offices will be overwhelmed with patients seeking care. Therefore, triage should be conducted to: 1) identify persons who might have pandemic influenza, 2) separate them from others to reduce the risk of disease transmission, and 3) identify the type of care they require (i.e., home care or hospitalization) (see Clinical Guidelines Section).

- Develop a strategy for triage, diagnosis, and isolation of possible pandemic influenza patients. Consider the following triage mechanisms:
  - Using phone triage to identify patients who need emergency care and those who can be referred to the satellite flu clinic, a medical office or other non-urgent facility
  - Assigning separate waiting areas for persons with respiratory symptoms
  - Assigning a separate triage evaluation area for persons with respiratory symptoms located outside (in advance of) the usual waiting/registration area
  - Assigning a "triage coordinator" to manage patient flow, including deferring or referring patients who do not require emergency care (see Clinical Guidelines Section).
- Review procedures for the clinical evaluation of patients in the emergency department and in outpatient medical offices to facilitate efficient and appropriate disposition of patients.
- Review admission procedures and streamline them as needed to limit the number of patient encounters in the hospital (e.g., direct admission to an inpatient bed).
- Identify a "trigger" point at which screening for signs and symptoms of pandemic influenza in all persons entering the hospital will escalate from passive (e.g., signs at the entrance) to active (e.g., direct questioning). In addition to visual alerts, potential screening measures might include priority triage of persons with respiratory symptoms and telephone screening of patients with appointments.
- Pre-Hospital Triage and Transport Capability: Massachusetts has adopted an Ambulance Task Force Mobilization plan as part of its EMS MCI Planning Guide. Under this plan, 58 task forces (five ambulances plus alternates per task force for a total of 348 public, private, and third service ambulances) have been identified that can be requested and dispatched to provide assistance at the scene of an MCI once normal mutual aid has been exhausted. This capability, while designed to be activated for a large scale MCI, will provide surge triage and transport capacity during a pandemic.

(f) **Facility access:** Hospitals should determine in advance the criteria and procedures they will use to limit access to the facility if pandemic influenza spreads through the community.

- Define "essential" and "non-essential" visitors with regard to the hospital and the population served.
- Develop protocols for limiting non-essential visitors.
- Develop criteria or "triggers" for temporary closing of the hospital to new admissions and transfers.
  - Develop protocols to comply with MDPH instructions for real time bed-reporting and for immediate notification of any closing to area CMED, the RMCC (if available), the Hospital Diversion website, and MDPH.
  - The criteria should consider hospital staffing ratios, isolation capacity, risks to non-influenza patients, and availability of local, regional capacity, such as the satellite ISCU.

        - As part of this effort, hospital administrators should: 1) determine who will make decisions about temporary closings and how and to whom these decisions will be communicated, and 2) consult with state and local health departments on current policies for hospital admissions and any provisions for an altered standard of care.
    - Determine how to involve hospital security services in enforcing access controls. Plan for surge capacity for hospital security. Meet with local law enforcement officials in advance to determine what assistance, if any, they can provide. Note that local law enforcement might be overburdened during a pandemic and have limited ability to assist healthcare facilities with security services.

(g) **Occupational health**: During a pandemic, the healthcare workforce will be stressed physically and psychologically. Like others in the community, many healthcare workers will become ill.

- Healthcare facilities must be prepared to: 1) protect healthy workers from exposures in the healthcare setting through the use of recommended infection control measures; 2) evaluate and manage symptomatic and ill healthcare personnel; 3) distribute and administer antiviral drugs and/or vaccines to healthcare personnel, if available, and as recommended by HHS and state health departments; and 4) provide psychosocial services to health care workers and their families to help sustain the workforce.
- Managing ill workers
    - Establish a plan for detecting signs and symptoms of influenza in healthcare personnel before they report for duty.
    - Develop policies for managing healthcare workers with respiratory symptoms that take into account HHS recommendations for healthcare workers with influenza (see www.cdc.gov/ncidod/hip/GUIDE/infectcont98.htm
- Consider assigning staff who are recovering from influenza to care for influenza patients.
- Time-off policies: Ensure that time-off policies and procedures consider staffing needs during periods of clinical crisis.
- Reassignment of high-risk personnel: Establish a plan to protect personnel at high risk for complications of influenza (e.g., pregnant women, immune compromised persons) by reassigning them to low-risk duties (e.g., non-influenza patient care, administrative duties that do not involve patient care) or placing them on furlough.
- Psychosocial health services (see also the Psychosocial Section): Identify mental health and faith-based resources for counseling of healthcare personnel during a pandemic.
- Counseling should include measures to maximize professional performance and personal resilience by addressing management of grief, exhaustion, anger, and fear; physical and mental health care for oneself and one's loved ones; and resolution of ethical dilemmas.
- Determine a strategy for supporting healthcare workers' needs for rest and recuperation.
- Develop a strategy for housing and feeding healthcare personnel who might be needed on-site for prolonged periods.
- Develop a strategy for accommodating and supporting staff that have child- or elder-care responsibilities.
- Influenza vaccination and use of antiviral drugs
    - Promote annual influenza vaccination among hospital employees. Increased vaccination coverage during the Interpandemic Period might help increase vaccine acceptance during a pandemic and will limit the spread of seasonal influenza.
    - Ensure that a system is in place for documenting influenza vaccination of healthcare personnel. When the Massachusetts Immunization Information System (MIIS) is developed, data will be entered into the National Healthcare Safety Network (NHSN; www.cdc.gov/ncidod/hip/NNIS/members/nhsn.htm) to help track employee vaccination and health status.

- Establish a strategy for rapidly vaccinating and/or providing antiviral prophylaxis or treatment to healthcare personnel as recommended by HHS and MDPH. Preliminary recommendations on the use of antiviral drugs and vaccination have been established (see the Vaccine Distribution and Antiviral Distribution Sections) but will need to be tailored to fit the epidemiology of the pandemic.

(h) Use and administration of vaccines and antiviral drugs

- Pandemic influenza vaccine and "pre-pandemic" influenza vaccine: Once the characteristics of a new pandemic influenza virus are identified, the development of a pandemic vaccine will begin. Recognizing that there may be benefits to immunization with a vaccine prepared before the pandemic against an influenza virus of the same subtype, efforts are underway to stockpile vaccines for subtypes with pandemic potential. As supplies of these vaccines become available, it is possible that some healthcare personnel and others critical to a pandemic response will be recommended for vaccination to provide partial protection or immunological priming for a pandemic strain. Policies for the use of pre-pandemic vaccine have not been finalized.
- Interim recommendations on priority groups for vaccination and strategies for vaccine distribution are discussed in the Vaccine Distribution Section. During a pandemic, these recommendations will be updated, taking into account populations which are most at risk. In the interim, healthcare facilities should:
  - Monitor updated HHS information and recommendations on the development, distribution, and use of a pandemic influenza vaccine (http://www.pandemicflu.gov)
  - Work with local and state health departments on plans for distributing pandemic influenza vaccine.
  - Provide estimates of the quantities of vaccine needed for hospital staff and patients and submit to MDPH, as requested.
  - Develop a stratification scheme for prioritizing vaccination of healthcare personnel who are most critical for patient care and essential personnel to maintain the day-to-day operation of the healthcare facility.
  - Develop a pandemic influenza vaccination plan in the hospital.
- Antiviral drugs: Interim recommendations for the use of antiviral drugs are discussed in the Antiviral Distribution Section. Healthcare facilities should consider how antiviral drugs might be used in their patient and healthcare worker populations, taking into account state and national guidelines, and determine if a reserve supply should be stockpiled.

(i) **Surge capacity:** Healthcare facilities should plan ahead to address emergency staffing needs and increased demand for isolation rooms, ICUs, assisted ventilation services, and consumable and durable medical supplies. Hospital planners can use Flu Surge software (http://www.cdc.gov/flu/flusurge.htm) to estimate the potential impact of a pandemic on resources such as staffed beds (both overall and ICU) and ventilators (see also HRSA and AHRQ planning and surge capacity resources listed in Appendix 1.)

- Staffing Overview: Pandemic flu presents three major challenges to surge personnel staffing: the overwhelming number of projected patients requiring the care of health professionals, the increased incidence of the illness among direct care workers, and the duration of a pandemic. Unlike many mass casualty incidents with an immediate need for surge that wanes relatively quickly over time, the intensity and duration of the need for surge in a pandemic over months, and perhaps longer, will result in a severely stressed workforce. Standards of care, as well as the settings in which care is provided, will be required to adjust to the epidemic in order to provide the highest possible levels of care to the greatest number of patients. Because health care personnel and their families may be affected directly by the illness, we can expect that there will be high absenteeism rates among health care staff, at least until a vaccine becomes available. While retired health care providers and other MSAR and MRC volunteers can be called on to assist in the care of the ill, it is likely that much of the care will be become

the responsibility of families, whether the patient is at home or in a hospital. It will be necessary to develop informational materials, and perhaps short courses, on the care of the sick. Legal protections and waivers of licensing requirements that will be needed to ensure the most robust workforce possible are under development.

- Massachusetts System for Advance Registration (MSAR) Program
- Massachusetts' ESAR-VHP program, MSAR, was launched in April, 2006.
  - The program will register, pre-credential, activate, and coordinate the movement of volunteer health professionals. Based on NIMS, the program will be interoperable with other state ESAR-VHP programs. The system can be activated only upon approval by the Commissioner of Public Health or his/her designee. More information about the program can be found at www.mass.gov/msar or by email at msar@dph.state.ma.us.
  - Initially, only hospital based physicians and nurses will be included in the pre-credentialed database. Eventually, the database will include 63 resource categories of health care volunteers and non-medical support volunteers interested in working in a health care environment.
  - Medical Reserve Corps will be fully integrated, including a point of contact activation schema allowing for MRC control of local resources.
  - At this time, the legislation to provide liability protection or workmen's compensation for MSAR volunteers is under development.
  - It is expected that during a pandemic, MSAR will, on request by local officials and/or the hospital, support local staffing for the ISCUs, the outpatient screening areas, and hospitals to the greatest extent possible.
  - Registration will be voluntary, and only those who choose to join will be entered into the database. It is likely that recruitment will escalate once an emergency situation has been identified. Any personnel not in the system, but who choose to join once the impact of the pandemic is underway, will be integrated and deployed as rapidly as possible, but delays are anticipated as resources to conduct the registration and pre-credentialing activities will be scarce.

Hospital Staffing

- Assign responsibility for the assessment and coordination of staffing during an emergency.
- Estimate the minimum number and categories of personnel needed to care for a single patient or a small group of patients with influenza complications on a given day.
- Determine how the hospital will meet staffing needs as the number of patients with pandemic influenza increases and/or healthcare and support personnel become ill or remain at home to care for ill family members.
- Consider the following options:
  - Assign patient-care responsibilities to clinical administrators
  - Recruit retired healthcare personnel known to facility
  - Use trainees (e.g., medical and nursing students)
  - Use patients' family members in an ancillary healthcare capacity
  - Request MSAR volunteers
  - Alter staffing ratios/shift duration
  - Implement tiered staffing
- Regional Mutual Aid Agreements will provide the foundation to determine whether and how staff will be shared with other healthcare facilities, and how salary issues will be addressed for employees shared between facilities. Each HRSA regional hospital planning group has completed or is working on a regional MAA.
- State and local health departments can help assess the feasibility of recruiting staff from MSAR, other hospitals and/or regions, and Medical Reserve Corps, Citizen Emergency Response Team (CERTs), and other response groups.

- Increase cross-training of personnel to provide support for essential patient-care areas at times of severe staffing shortages (e.g., in emergency departments, ICUs, or medical units).
- Develop Just-In-Time training materials and process to orient volunteers not familiar with the institution or the needed skills/competencies.
- Create a list of essential-support personnel titles using HEICS to cover services needed to maintain hospital operations (e.g. environmental and engineering services, nutrition and food services, administrative, clerical, medical records, information technology, laboratory).
- Create a list of non-essential positions that can be re-assigned to support critical hospital services or placed on administrative leave to limit the number of persons in the hospital.
- Recruit hospital staff and employees for MSAR program and submit pre-credentialed rosters to MSAR program at MDPH.
- Identify insurance and liability issues related to the use of non-facility staff, and activation of the Influenza Specialty Care Unit.
- Explore opportunities for recruiting healthcare personnel from other affiliated healthcare settings, (e.g., medical offices and day-surgery centers) and refer them to MSAR for registration and pre-credentialing

Bed capacity

- Review and revise admissions criteria for times when bed capacity is limited
- Develop policies and procedures for expediting the discharge of patients who do not require ongoing inpatient care (e.g., develop plans and policies for transporting discharged patients home or to other facilities; create a patient discharge holding area or discharge lounge to free up bed space).
- Work with the RMCC (if available), local health departments, home healthcare agencies, and/or MSAR if activated to arrange at-home follow-up care for patients who have been discharged early and for those whose admission was deferred because of limited bed space.
- Work with local health departments and local emergency mangers to begin to inform public about location of satellite flu clinic and ISCU.
- Develop criteria or “triggers” for temporarily canceling elective surgical procedures and determining what and where emergency procedures will be performed during a pandemic. Determine which elective procedures will be temporarily postponed.
- Determine whether patients who require emergency procedures will be transferred to another hospital.
- Ensure sufficient staff on all shifts is trained to report bed, ventilator, and other asset availability on the MDPH Bed Reporting site as requested by MDPH.
- In the event hospitals need to provide care for numbers of patients exceeding their licensed capacity. MDPH will issue an automatic waiver to permit increased capacity.
- MDPH intends to procure and stockpile the beds, equipment and supplies needed to open Level 3 and 4 beds. These will be maintained in hospitals (dependent upon individual hospital storage capacity) and/or state stockpiles.
- Pandemic specific waivers, regulations, requirements, and liability protections for Altered Standards of Care are under development.
- Develop policies and procedures for shifting patients between nursing units to free up bed space in critical-care areas and/or to cohort pandemic influenza patients.
- Develop Mutual Aid Agreements (MAAs) or Memoranda of Understanding/Agreement (MOU/As) with other local facilities who can accept non-influenza patients who do not need critical care.
- Identify areas of the facility that could be vacated for use in cohorting influenza patients. Consider developing criteria for shifting use of available

space based on ability to support patient-care needs (e.g., access to bathroom and shower facilities). Consider developing cohorting protocols based on a patient's stage of recovery and infectivity.

Consumable and durable supplies

State

- MDPH is planning to procure and stockpile the beds, equipment and supplies needed to open Level 3 and 4 beds. These will be maintained in state stockpiles and transported to the hospitals as needed. Level 4 supplies may be used by hospital within their own facility or at the satellite ISCU.
- MDPH is planning to procure additional ventilators that will be stored and maintained by the state, and made available to hospitals on an as needed basis during the pandemic. Ventilators will be made available to all hospitals for training purposes once procured.
- Monitor Hospital Capacity System: The MDPH Hospital Capacity website collects and displays current hospital diversion status as well as daily available staffed bed status. At a minimum, should pandemic flu occur, MDPH will require all Massachusetts hospitals to logon on to the website and report open staffed bed availability at 4PM daily. MDPH may increase the number of daily bed counts as needed.
- MDPH currently requests the following available staffed bed categories on the Hospital Capacity website: Adult and Pediatric ICU, Monitored Med/Surg, Non-Monitored Med/Surg, Regular Pediatric and Psychiatric beds. MDPH also collects the number of patients boarded in the Emergency Department awaiting an Adult ICU, Monitored Med/Surg or Non-Monitored Med/Surg bed. However, MDPH can request and collect Emergency Department boarder data on each and every bed category on the website, if necessary.
- During pandemic flu, MDPH may also request that hospitals report counts of "Other Medical Supplies" including, but not limited to: Isolation Rooms, Adult and Pediatric Ventilators, N95 Particulate Respirators, Morgue Capacity and Antiviral Stock including Amantadine, Rimantadine, Zanamivir and Oseltamivir. MDPH is able to add and edit collectable and trackable categories on the system.
- There will also be a free form comment text box where hospitals may submit items needed during pandemic flu to MDPH.
- Once data is entered on the system, reports and extracts will be run in order to determine hospital capacity, surge and inventory supply and need during pandemic flu.
- To the extent possible, MDPH will coordinate and provide the surge assets to the hospitals.

Hospitals

- Evaluate the existing system for tracking available medical supplies in the hospital to determine whether it can detect rapid consumption, including items that provide personal protection (e.g., gloves, masks). Improve the system as needed to respond to growing demands for resources during an influenza pandemic.
- Consider stockpiling enough consumable resources such as masks (see Box 2) for the duration of a pandemic wave (6-8 weeks).
- Assess anticipated needs for consumable and durable resources, and determine a trigger point for ordering extra resources. Estimate the need for respiratory care equipment (including mechanical ventilators), and develop a strategy for acquiring additional equipment if needed. Neighboring hospitals might consider developing inventories of equipment and determining whether and how that equipment might be shared during a pandemic.
- Anticipate needs for antibiotics to treat bacterial complications of influenza, and determine how supplies can be maintained during a pandemic (see Clinical Guidelines Section)

- Establish contingency plans for situations in which primary sources of medical supplies become limited. Consult with the local and state health departments about access to the national stockpile during an emergency.

All Providers

- Continuation of essential medical services (all providers)
- Address how essential medical services will be maintained for persons with chronic medical problems served by the hospital (e.g., hemodialysis patients).
- Develop a strategy for ensuring uninterrupted provision of medicines to patients who might not be able to (or should not) travel to hospital pharmacies.

(i) **Security:** Healthcare facilities should plan for additional security. This may be required given the increased demand for services and possibility of long wait times for care, and because triage or treatment decisions may lead to people not receiving the care they think they require.

(j) **Mortuary issues:** To prepare for the possibility of mass fatalities during an influenza pandemic, hospitals should do the following:

- Assess current capacity for refrigeration of deceased persons.
- Discuss mass fatality plans with local and state health officials and medical examiners.
- Work with local health officials and medical examiners to identify temporary morgue sites.
- Determine the scope and volume of supplies (e.g., body bags) needed to handle an increased number of deceased persons.
- Resources for addressing these issues are provided in Appendix 1.

B) Planning for provision of care in non-hospital settings:

1) **Outpatient settings.** Appropriate management of outpatient influenza cases will reduce progression to severe disease and thereby reduce demand for inpatient care.

- Most persons who seek care can be managed appropriately by outpatient providers. Health care networks may designate specific providers, offices, or clinics for patients with influenza-like illness. Nevertheless, some persons with influenza will likely present to all medical offices and clinics so that planning and preparedness is important at every outpatient care site. A system of effective outpatient management will have several components:
- Assumptions: 50% of those who get influenza are expected to not require any medical/health care. Of the remaining 50%, 8% are expected to require hospital level care. All others are expected to be able to be managed at home or in outpatient facilities. For Massachusetts, with a 30% attack rate, the projection is that 920,000 will need outpatient or home care during the course of the wave (cumulative number).
- With the entire world following the news coverage of the developing pandemic real time, we can expect that the public concern/panic may well precede the actual confirmation of local cases. Local health department, practitioners' offices and clinics, and hospitals will be inundated with calls and visits of those concerned about the possibility of the illness, or exposure to it. Therefore, the activation of triage areas across the health care delivery system will be of paramount importance in providing access to care to patients while maintaining the core operations of healthcare delivery.
- Massachusetts hospitals should work with local health departments and emergency response personnel and groups to identify potential sites for a satellite Influenza Specialty Care Unit. (ISCU). It is intended that these sites will provide outpatient triage and care, as well as inpatient care for influenza patients too sick to go home, but not meeting the hospital inpatient threshold for admission. There may be a need to activate the outpatient area prior to the inpatient areas, and more than one outpatient screening site may be needed for each cluster.

        - The first step in developing a plan for the satellite ISCU is for hospitals to work with their regional hospitals to identify the cluster of communities that will be directed to a facility associated with each acute care hospital. The primary purpose of these clusters is to identify, in advance of the pandemic, where to direct residents in the early phase of the pandemic, and to develop planning projections based on the population of the community cluster.
        - While many residents may continue to choose to travel outside of their designated cluster area, it is expected that circumstances related to the pandemic (such as children out of school and fear) are likely to alter usual site of care to a geographically proximate site of care.
        - Local health departments and municipalities and volunteer organizations can begin to develop public information materials (posters, flyers, hot line scripts, cable TV spots, etc.) that can be ready to go when the triage site is activated. For example, "If you live in "town a", and you think you have the flu, please go to the "name" Hospital Influenza Clinic at 250 Main Street in" town b". Please DO NOT go to "X" Hospital or your doctor's office or clinic. This is for your protection, as well as the sick patients who will be there who do not have the flu. We appreciate your cooperation…"
        - While we plan to have an outpatient facility co-located with each hospital ISCU, communities may choose to plan for an additional site within their community cluster.
    - Hospitals should develop a strategy for triage of potential influenza patients, which may include establishing a site outside of the Emergency Department where persons can be seen initially and identified as needing emergency care or may be referred to an outpatient care site for diagnosis and management.
    - Large providers with multiple sites of care may plan to separate flu and non-flu visits, may choose to decrease the number of open sites when staff numbers are inadequate, or may choose to close offices and redirect staff to the ISCUs through the MSAR program.
    - Finally, medical reserve corps members, home health care providers, visiting nurse organizations, and other community based volunteers can provide follow-up for those managed at home, decreasing the potential exposure of the public to persons who are ill and may transmit infection. They will be coordinated primarily locally and through MSAR when needed and will work with the hospitals and the Influenza Specialty Care Clinics.
    - Effective management of outpatient care in communities will require that health departments, health care organizations, and providers communicate and plan together. Issues to address include:
        - Plan to establish and staff telephone hotlines.
        - Develop training modules, protocols and algorithms for hotline staff.
        - Within health care networks based on the community clusters, develop plans on the organization of care for influenza patients and develop materials and strategies to inform patients on care-seeking during a pandemic
        - For clinics and offices, develop plans that include education, staffing, triage, infection control in waiting rooms and other areas, and communication with healthcare partners and public health authorities.

3) **Non-hospital healthcare facilities**: The hospital planning recommendations in this section can serve as a model for planning in other healthcare settings, including nursing homes and other residential care facilities, and primary care health centers. All healthcare facilities should do the following:
    - Create a planning team and develop a written plan.
    - Establish a decision-making and coordinating structure that can be tested during the Interpandemic Period and will be activated during an influenza pandemic.
    - Determine how to conduct surveillance for pandemic influenza in healthcare personnel and, for residential facilities, in the population served.
    - Develop policies and procedures for managing pandemic influenza in patients and staff.

- Educate and train healthcare personnel on pandemic influenza and the healthcare facility's response plan.
- Determine how the facility will communicate and coordinate with healthcare partners and public health authorities during a pandemic.
- Determine how the facility will communicate with patients and help educate the public regarding prevention and control measures.
- Develop a plan for procuring the supplies (e.g., personal protective equipment [PPE]) needed to manage influenza patients.
- Determine how the facility will participate in the community plan for distributing either vaccine or antiviral drugs, including possibly serving as a point of distribution and providing staff for alternative community points of distribution.
- Emergency medical services, private homecare services, FQHCs, and rural health clinics may adapt their planning activities from this model. In some parts of the country, FQHCs and rural health clinics may need to rely on volunteers to provide and administer pandemic influenza vaccines.

3) **Alternate care sites (ISCUs**): If an influenza pandemic causes severe illness in large numbers of people, hospital capacity will be overwhelmed. In that case, care will need to be provided in the community at an alternate site (e.g., school gymnasiums, armories, convention centers). MDPH is working with hospitals to develop community sites for hospital based satellite Influenza Specialty Care Units. These sites are intended to provide outpatient triage and treatment, as well as inpatient care for the influenza patients that are too ill to send home, but for whom there is not a hospital bed available. The level of care provided at the ISCUs will be for flu patients who are too sick to be cared for at home, or for whom home care is not possible, but who do not meet the criteria for admission to an acute care hospital
   - ISCUs will be licensed as satellites of the hospital, and the management, administration and medical operations will be under that of the parent hospital.
   - Hospitals will provide the key management, administration and medical operations staff, and will provide the registration and medical records forms, laboratory requests, billing forms, and any other paperwork/forms/templates used by the hospital.
   - All Massachusetts acute care hospitals should work with their local preparedness partners to identify a site in one of their pandemic cluster communities and submit an application for an ISCU license (under development). Once the license is submitted, MDPH will review and conduct a site visit if needed.
   - Hospitals should develop a process and protocols for the determination of the admission criteria for an inpatient hospital bed, and the trigger to request activation of the ISCU.
   - No ventilators, dialysis machines, IV pumps, or chemotherapy or other infusion pumps will be available at the ISCUs.
   - Only flu patients will be admitted to ISCUs.

Recommendations for the Pandemic Period

Following initial detection of pandemic influenza anywhere in the world, the state and facilities' pandemic influenza response plans should be activated in accordance with the level of pandemic activity (see Table 1).

1) **Pandemic influenza reported outside the United States.** If cases of pandemic influenza have been reported outside the United States, the main steps will be to:
   - Establish contact with key public health, healthcare, and community partners.
   - Implement hospital surveillance for pandemic influenza, including detection of patients admitted for other reasons who might be infected with the pandemic strain of influenza virus.
   - Inventory available anti-virals and develop protocols and priority lists for distribution according to CDC guidelines and available number of courses
   - Implement a system for early detection and antiviral treatment of healthcare workers who might be infected with the pandemic strain of influenza virus.
   - Reinforce infection control measures to prevent the spread of influenza.

- Accelerate the training of staff, in accordance with the facility's pandemic influenza education and training plan.

2) **Pandemic influenza reported in the United States.** If cases of pandemic influenza have been reported in the United States, additional steps will be to:
    - Identify when pandemic influenza cases begin in the community. See also Surveillance Section.
    - Identify, isolate, and treat all patients with potential pandemic influenza. Implement activities to increase capacity, supplement staff shortages, and provide supplies and equipment.
    - Maintain close communication within and among healthcare facilities and with state and local health departments.
    - Report bed, anti-viral, ventilator and other capacities to MDPH as requested.
    - Request activation of ISCU site when needed.
    - Identify staff assignments and conduct training of key staff roles of ISCU.
    - Request MSAR volunteers as needed to staff ISCUs and triage sites.

Table 1. Hospital Pandemic Influenza Triggers

Pandemic Influenza Level	Suggested Actions
Interpandemic Period	Conduct planning with local partners Conduct education/training Conduct hospital surveillance for influenza (see Surveillance Section) Identify ISCU sites and plans for activation
Pandemic Alert Period	Increase preparation; refine local plan Conduct hospital surveillance for influenza (see Surveillance Section)
Pandemic Period	
Pandemic influenza outside the United States	Establish regular contact with key public health, healthcare, and community partners. Implement hospital surveillance for pandemic influenza (see Surveillance Section) in incoming patients and previously admitted patients. Implement a system for early detection and treatment of healthcare personnel who might be infected with the pandemic strain of influenza. Reinforce infection control procedures to prevent the spread of influenza. Accelerate staff training in accordance with the facility's pandemic influenza education and training plan.
Pandemic influenza in the United States	As above, plus: Implement activities to increase capacity, supplement staff, and provide supplies and equipment. Maintain close contact with and among healthcare facilities and with state and local health departments. Post signs for respiratory hygiene/cough etiquette. Maintain high index of suspicion that patients presenting with influenza-like illness could be infected with pandemic strain. If pandemic strain is detected in local patient, community transmission can be assumed and hospital would move to next level of response.
Pandemic influenza in the local area	As above, plus; <u>Emergency department (ED)</u> Establish segregated waiting areas for persons with symptoms of influenza. Implement phone triage to discourage unnecessary ED/outpatient department visits. Enforce respiratory hygiene/cough etiquette. <u>Access controls</u> Limit number of visitors to those essential for patient support. Screen all visitors at point of entry to facility for signs and symptoms of influenza. Limit points of entry to facility; assign clinical staff to entry screening. <u>Hospital admissions</u> Defer elective admissions and procedures until local epidemic wanes. Discharge patients as soon as possible. Cohort patients admitted with influenza. Monitor for nosocomial transmission. <u>Staffing practices</u> Consider furlough or reassignment of pregnant staff and other staff at high risk for complications of influenza. Consider re-assigning non-essential staff to support critical hospital services or placing them on administrative leave; cohort staff caring for influenza patients. Consider assigning staff recovering from influenza to care for influenza patients. Implement system for detecting and reporting signs and symptoms of influenza in staff reporting for duty.
Nosocomial transmission	As above, plus, if nosocomial transmission is limited to only a small number of units

	in the facility, Close units where there has been nosocomial transmission. Cohort staff and patients. Restrict new admissions (except for other pandemic influenza patients) to affected units. Restrict visitors to the affected units to those who are essential for patient care and support. See also Clinical Guidelines.
Widespread transmission in community and hospital; patient admissions at surge capacity	As above plus: Redirect personnel resources to support patient care (e.g., administrative clinical staff, clinical staff working in departments that have been closed [e.g., physical/occupational therapy, cardiac catheterization]). Contact pre-identified community volunteers (e.g., retired nurses and physicians, clinical staff working in outpatient settings). Consider placing on administrative leave all non-essential personnel who cannot be reassigned to support critical hospital services. Consider requesting MSAR volunteers. Notify MDPH when ISCU activation needed.